

CLAIMS:

I claim:

1. An apparatus for supporting a substrate thereon comprising:
a base having a rigid frame for forming a lower portion of a chuck;
an upper body residing atop said base for having the substrate reside on its
surface, but in which said upper body is coupled flexibly to said base to allow said
upper body to tilt relative to said base.
2. The apparatus of claim 1 further including at least one lift pin residing
below the surface of said upper body, said lift pin can be raised through an opening in
the surface to engage an underside of the substrate to raise the substrate off of the
surface when the substrate is resident thereon.
3. The apparatus of claim 1 further including an elastomer coupled between
said base and said upper body for flexibly coupling said upper body to said base.
4. The apparatus of claim 1 further including a spring coupled between said
base and said upper body for flexibly coupling said upper body to said base.
5. An apparatus for supporting a wafer thereon comprising:
a chuck base having a rigid frame for forming a lower portion of a wafer chuck;
a chuck body residing atop said chuck base for having the wafer reside thereon;

a flexible coupling disposed between said chuck base and said chuck body to allow said chuck body to tilt relative to said chuck base.

6. The apparatus of claim 5 wherein said chuck body has a central opening therethrough in which a disk is inserted into the central opening and rigidly mounted onto the underlying chuck base, said flexible coupling disposed between the disk and the chuck body to allow the chuck body to tilt.

7. The apparatus of claim 6 further comprising a plurality of fingers, said fingers residing on said chuck base and raised through openings present on the chuck body to raise the wafer for assisting in unloading the wafer from said chuck body.

8. The apparatus of claim 6 wherein said flexible coupling is an elastomer disposed between said disk and said chuck body.

9. The apparatus of claim 8 wherein said flexible coupling is an O-ring disposed between said disk and said chuck body.

10. The apparatus of claim 8 further comprising a plurality of fingers, said fingers residing on said chuck base and raised through openings present on the chuck body to raise the wafer for assisting in unloading the wafer from said chuck body.

11. A wafer processing chamber comprising:

a sleeve for forming an enclosing vessel to retain a processing fluid therein;
a wafer chuck for having a wafer resident thereon and when coupled to enclose
a bottom opening of said sleeve, the sleeve engages an outer periphery of the wafer in
order for the wafer to form an enclosing floor to retain the processing fluid within the
vessel;

said wafer chuck comprising:

- (1) a chuck base having a rigid frame and forming a lower portion of
said wafer chuck;
- (2) a chuck body residing atop said chuck base for having the wafer
reside thereon;
- (3) a flexible coupling disposed between said chuck base and said
chuck body to allow said chuck body to tilt relative to said chuck base.

12. The wafer processing chamber of claim 11 wherein said chuck body has a
central opening therethrough in which a disk is inserted into the central opening and
rigidly mounted onto the underlying chuck base, said flexible coupling disposed
between the disk and the chuck body to allow the chuck body to tilt.

13. The wafer processing chamber of claim 12 further comprising a plurality of
fingers, said fingers residing on said chuck base and raised through openings present
on the chuck body to raise the wafer for assisting in unloading the wafer from said
chuck body.

14. The wafer processing chamber of claim 12 wherein said flexible coupling is an elastomer disposed between said disk and said chuck body.

15. The wafer processing chamber of claim 14 wherein said flexible coupling is an O-ring disposed between said disk and said chuck body.

16. The wafer processing chamber of claim 14 further comprising a plurality of fingers, said fingers residing on said chuck base and raised through openings present on the chuck body to raise the wafer for assisting in unloading the wafer from said chuck body.

17. A method of processing a wafer comprising:
placing a wafer atop a wafer chuck, the chuck having a base and an upper body in which the upper body is coupled to the base by a flexible coupling that allows the upper portion to tilt relative to the base;
engaging the wafer to a hollow sleeve which forms an enclosing vessel to retain a processing fluid therein, the wafer forming a floor of the vessel;
processing the wafer utilizing the processing fluid and in which tilting of the wafer allows for a compliant engagement of the wafer and the sleeve to adjust for gaps present at the engagement to prevent or reduce leakage of the processing fluid.

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18. The method of claim 17 further comprising the raising of at least one lift pin through the upper body to raise the wafer off of the upper body for removal of the wafer from the wafer chuck.

19. The method of claim 18 further comprising the processing of the wafer in which the processing fluid is used to deposit copper material onto the wafer.

20. The method of claim 18 further comprising the processing of the wafer in which the processing fluid is used to remove copper material from the wafer.